

SiC SCHOTTKY DIODE TYPE 600A

Features

- High surge current capable
- Zero reverse recovery current
- High bandwidth
- Temperature independent switching behavior
- VDC 1200 V

Benefits

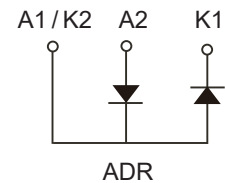
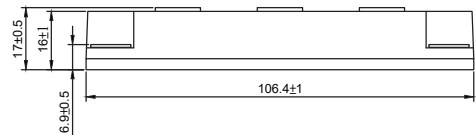
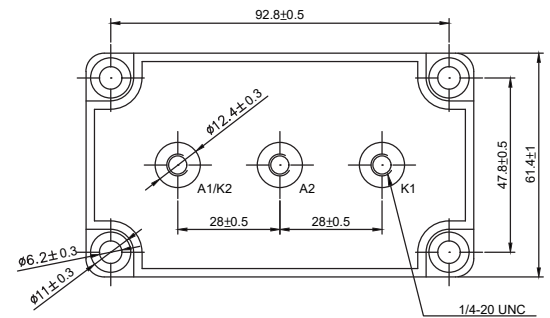
- Unipolar rectifier
- Zero switching loss
- Higher efficiency
- Smaller heat sink
- Parallel devices without thermal runaway

Applications

- Motor drives
- Switch mode power supplies
- Ev chargers
- Solar inverters
- Welding equipment
- Power factor correction
- Diode snubber
- Automotive
- Induction heating



Dimensions in mm (1 mm = 0.0394")



Maximum Ratings

Operating Junction Temperature : -55 °C to +175 °C

Storage Temperature : -55 °C to +175 °C

Part Number	Maximum Recurrent Peak Reverse Voltage	Maximum DC Blocking Voltage
CSRP2×600-120F1B	1200V	1200V

Maximum Rating	Symbol	Conditions	Value	Unit
Continuous forward current (per diode)	I_F	$T_C=80\text{ }^\circ\text{C}$	600*	A
Surge non-repetitive forward current sine halfwave (per diode)	I_{FSM}	$T_C=25\text{ }^\circ\text{C}$, $t_p=8.3\text{ ms}$	4200	
		$T_C=150\text{ }^\circ\text{C}$, $t_p=8.3\text{ ms}$	3000	
Repetitive peak reverse voltage	V_{RRM}	$T_J=25\text{ }^\circ\text{C}$	1200	V
Isolation voltage	V_{iso}	50/60 Hz, $t=1\text{ min}$ $I_{ISOL} \leq 1\text{ mA}$	3000	V
Mounting torque	To heatsink To terminal	M_d	M6 1/4-20 unc	3-5 3-5 Nm
Weight	W_t		324	g

* Specification of SiC device, but output current must be limited due to size of power connectors.

Electrical Characteristics, at $T_J = 25^\circ\text{C}$, unless otherwise specified. (per diode)

Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
DC blocking voltage	V_{DC}		1,200	-	-	V
Diode forward voltage	V_F	$I_F = 600\text{A}, T_J = 25^\circ\text{C}$	-	1.5	1.8	
		$I_F = 600\text{A}, T_J = 175^\circ\text{C}$	-	2.1	2.4	
Reverse current	I_R	$V_R = 1,200\text{V}, T_J = 25^\circ\text{C}$	-	0.1	0.25	mA
		$V_R = 1,200\text{V}, T_J = 175^\circ\text{C}$	-	0.3	1.5	

AC Characteristics (per diode)

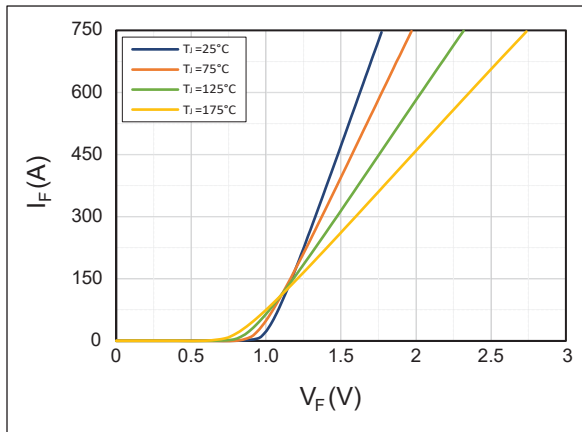
Static Characteristics	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Total capacitive charge	Q_{rr}	$V_R = 800\text{V}, T_J = 25^\circ\text{C}$	-	4,200	-	nC
Total capacitance	C	$V_R = 0\text{V}, f = 1\text{ MHz}$ $T_J = 25^\circ\text{C}$	-	53,220	-	pF
		$V_R = 400\text{V}, f = 1\text{ MHz}$ $T_J = 25^\circ\text{C}$	-	3,108	-	
		$V_R = 800\text{V}, f = 1\text{ MHz}$ $T_J = 25^\circ\text{C}$	-	2,251	-	

Thermal Characteristics (per diode)

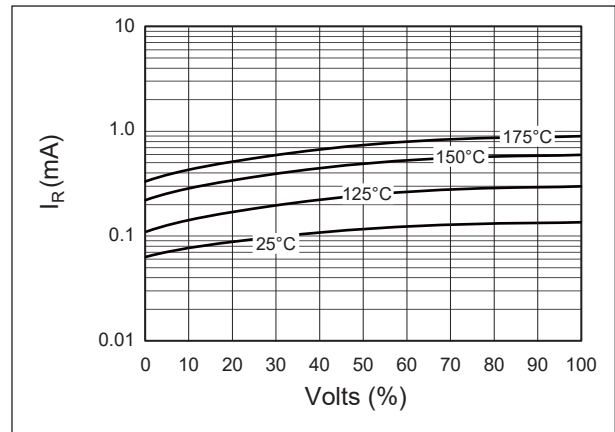
Static Characteristics	Symbol	Values	Unit
		typ.	
Thermal resistance from junction to case	$R_{\theta JC}$	0.06	$^\circ\text{C/W}$

Typical Performance

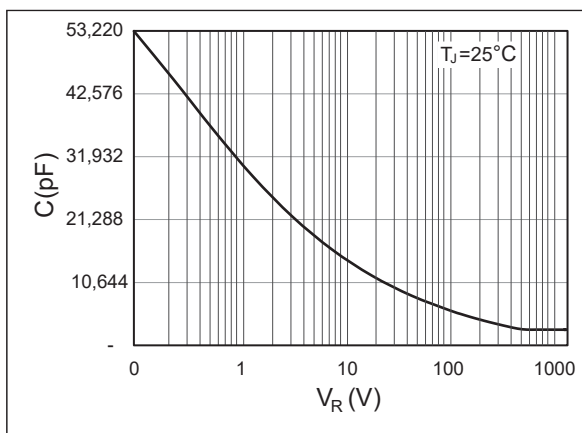
Forward Characteristics (parameterized on T_J)



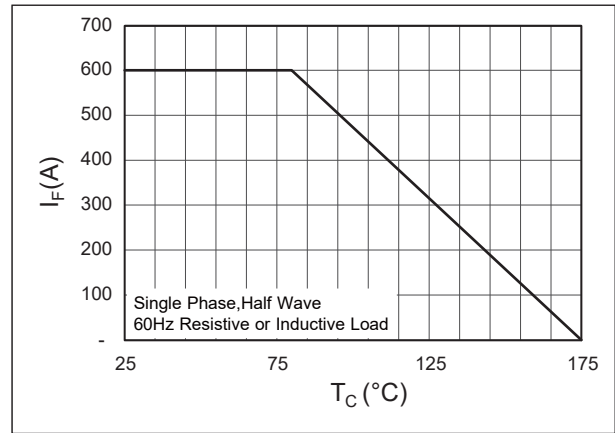
Reverse Characteristics (parameterized on T_J)



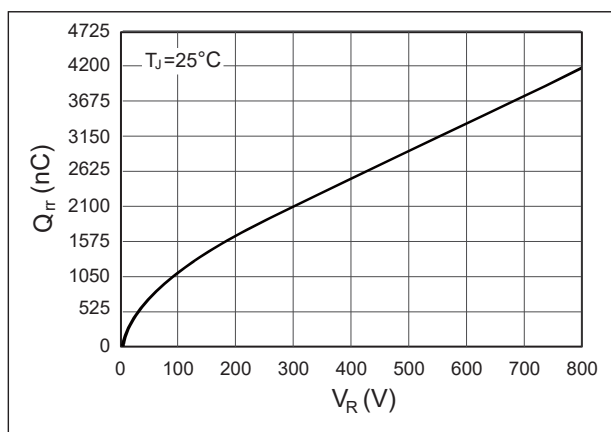
Capacitance



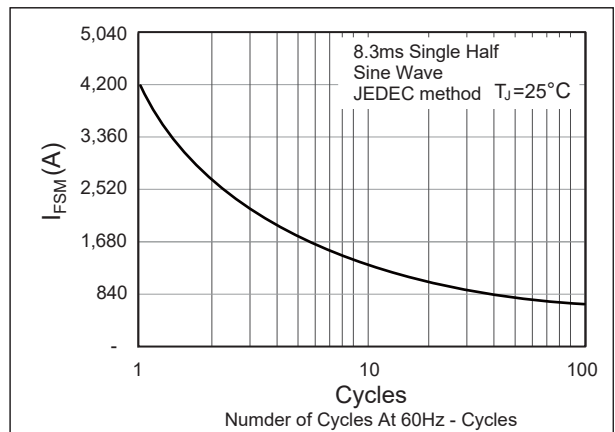
Current Derating



Recovery Charge



Forward Surge Current



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